

IN THE CLAIMS

Please amend the claims as follows, in which deletions are indicated by strikethrough or double brackets, and additions are indicated by underlining new material. The following listing replaces all previous listings, and versions of claims in the application:

1. (Previously presented) An air bag apparatus for shielding a vehicle occupant in the event of a side crash, said air bag apparatus comprising:

an acceleration sensor which detects acceleration in a side direction larger than a predetermined value to generate a detection signal;

an inflater which generates a gas in response to said detection signal; and

an air bag which is folded initially, and expands with said gas, wherein said air bag comprises a main section having one end which receives gas from said inflater and a protrusion section which is provided attached to and extending outwardly away from a tip portion of said main section such that an inner space of said protrusion section is connected with an inner space of said main section, said tip portion being disposed at an opposite end of the main section from said one end, said protrusion section extending substantially tangentially to the tip portion of said main section in a direction orthogonal to an expansion direction of the air bag and having at least one opening formed therein from which said gas is spouted.

2. (Previously presented) The air bag apparatus according to claim 1, wherein said protrusion section extends beyond said main section and comprises a pipe shape with openings formed therein at opposing ends thereof.

3. (Previously presented) The air bag apparatus according to claim 1, wherein said protrusion section is narrower than said tip portion of said main section and said at least one opening is formed in a portion thereof connected with and spaced away from said main section by an intermediate portion of the protrusion section.

4. (Previously presented) The air bag apparatus according to claim 1, wherein said protrusion section is pushed into the inner space of said main section prior to expansion.

5. (Previously presented) An air bag apparatus for shielding a vehicle occupant in the event of a side crash, said air bag apparatus comprising:

an acceleration sensor which detects acceleration in a side direction larger than a predetermined value to generate a detection signal;

an inflator which generates a gas in response to said detection signal; and

an air bag which is folded initially, and expands with said gas, wherein said air bag comprises a main section having one end which receives gas from said inflator and a protrusion section which is provided attached to and extending outwardly away from a tip portion of said main section such that an inner space of said protrusion section is connected with an inner space of said main section, said tip portion being disposed at an opposite end of the main section from said one end, said protrusion section extending substantially tangentially to the tip portion of said main section in a direction orthogonal to an expansion direction of the air bag and having at least one opening formed therein from which said gas is spouted;

wherein said protrusion section is pushed into the inner space of said main section prior to expansion such that said protrusion section is turned inside out.

6. (Previously presented) The air bag apparatus according to claim 1, wherein said main section comprises first and second side panels, which are sewed in a limb portion for contacting a limb of a vehicle occupant, such that outer surfaces of said first and second side panels are joined to each other.

7. (Previously presented) The air bag apparatus according to claim 1, wherein said main section comprises first and second side panels, and further wherein said air bag has at least one partition provided between said side panels in said inner space of said main section.

8. (Original) The air bag apparatus according to claim 7, wherein said at least one partition is formed by sewing a predetermined portion of said first and second side panels.

9. (Previously presented) The air bag apparatus according to claim 8, wherein said predetermined portion is shaped as one of a curved line, a circle or a semicircle.

10. (Previously presented) The air bag apparatus according to claim 8, wherein each said predetermined portion is substantially linear or S-shaped.

11. (Previously presented) The air bag apparatus according to claim 8, including multiple said partitions defined by respective predetermined portions and wherein said predetermined portions are shaped differently from each other.

12. (Previously presented) The air bag apparatus according to claim 8, wherein said predetermined portion determines an expansion direction of said air bag during an expanding process.

13. (Currently amended) An air bag apparatus for side crash, comprising:

an acceleration sensor which is provided to detect[[s]] acceleration in a side direction larger than a predetermined value and to generate a detection signal;

an inflator which is operable to generate[[s]] a gas in response to said detection signal, wherein said inflator is operatively mounted on a side portion of a vehicle seat; and

an air bag which is folded initially, and expands with said gas substantially in parallel to a linear expansion direction, wherein said air bag has at least one partition provided in an inner space of said air bag to determine the shape of the air bag during an expansion process, thereby facilitating a high speed expansion of the air bag to a final shape thereof, and

wherein said linear expansion direction is generally forward and upward from said side portion of said vehicle seat.

14. (Currently amended) The air bag apparatus according to claim 13, wherein said air bag comprises first and second side panels, which are sewed in a limb portion such that outer edges of said first and second side panels are joined to each other, and wherein the air bag has more than one of said partitions.

15. (Currently amended) The air bag apparatus according to claim 13, wherein said air bag comprises first and second side panels, and further wherein said at least one partition is ~~partitions are~~ formed by sewing predetermined portions of said first and second side panels together.

16. (Previously presented) The air bag apparatus according to claim 15, wherein each said predetermined portion is shaped as a curved line, a circle or a semicircle.

17. (Previously presented) The air bag apparatus according to claim 15, wherein each said predetermined portion is substantially linear or S-shaped.

18. (Currently amended) The air bag apparatus according to claim 15, wherein said ~~predetermined portions~~ airbag comprises a plurality of partitions which are shaped differently from each other.

19. (Currently amended) The air bag apparatus according to claim 15, wherein said ~~predetermined portion~~ at least one partition determines an expansion direction of said air bag during an expanding process, said expansion direction being substantially opposed to where the gas enters the air bag.

20. (Previously presented) An air bag used for an air bag apparatus for shielding a vehicle occupant in the event of a side crash, said air bag comprising:

a main section having one end which receives gas from an inflator; and

a protrusion section which is attached to and extends outwardly away from a tip portion of said main section in an expanded configuration of said air bag such that an inner space of said protrusion section is connected with an inner space of said main section,

wherein said air bag is folded initially, and expands with the gas from the inflator, said tip portion being disposed at an opposite end of the main section from said one end, and said protrusion section extends substantially tangentially to the tip portion of said main section in a direction orthogonal to an expansion direction of the air bag and has at least one opening formed therein from which said gas is spouted.

21. (Previously presented) The air bag according to claim 20, wherein said protrusion section extends outwardly beyond the main section and comprises a pipe shape with openings formed therein at opposing ends thereof.

22. (Previously presented) The air bag according to claim 20, wherein said protrusion section is narrower than said tip portion and has at least one opening in a portion thereof connected with said main section and spaced away therefrom by an intermediate portion of the protrusion section, and wherein upon deployment of said air bag, gas is expelled from said opening in a direction substantially perpendicular to a substantially linear expansion direction.

23. (Previously presented) The air bag according to claim 20, wherein said protrusion section is pushed into the inner space of said main section prior to expansion.

24. (Previously presented) An air bag for use in an air bag apparatus to shield a vehicle occupant in the event of a side crash, said air bag comprising:

a main section having one end which receives gas from an inflater; and

a protrusion section which is attached to and extends outwardly away from a tip portion of said main section in an expanded configuration of said air bag such that an inner space of said protrusion section is connected with an inner space of said main section,

wherein said air bag is folded initially, and expands with the gas from the inflater, said tip portion being disposed at an opposite end of the main section from said one end, and said protrusion section extends substantially tangentially to the tip portion of said main section in a direction orthogonal to an expansion direction of the air bag and has at least one opening formed therein from which said gas is spouted;

wherein said protrusion section is pushed into the inner space of said main section prior to expansion such that said protrusion section is turned inside out.

25. (Currently amended) An air bag used for an air bag apparatus shielding a vehicle occupant in the event of a side crash, said air bag comprising first and second side panels,

wherein said first and second side panels are sewed in a limb portion such that outer surfaces of said first and second side panels are joined to each other, and

wherein said air bag further comprises multiple partitions provided in an inner space of said air bag, said air bag is folded initially, and expands with gas supplied from an inflater substantially in parallel to a linear expansion direction, and said partitions determine the shape of the air bag during an expansion process, thereby facilitating a high speed expansion of the air bag to a final shape thereof;

wherein said inflator is mounted on a side portion of a vehicle seat, and
wherein said linear expansion direction is generally upward and forward from said side
portion of said vehicle seat.

26. (Currently Amended) The air bag apparatus according to claim 25, wherein said partitions are formed by sewing predetermined portions of said first and second side panels together.

27. (Previously presented) The air bag apparatus according to claim 26, wherein each said predetermined portion is substantially linear or S-shaped.

28. (Previously presented) The air bag apparatus according to claim 26, wherein said predetermined portions are shaped differently from each other.

29. (Previously presented) The air bag apparatus according to claim 26, wherein said predetermined portions are disposed non-symmetrically within the air bag.

30. (New) The air bag apparatus of claim 13, wherein said final shape of said air bag forms an outline including:

a proximal end adjacent the inflator and having a first width,
a medial portion having a second width that is greater than the first width, and
a distal end opposite the proximal end and having a third width which is less than the second width.

31. (New) The air bag apparatus of claim 25, wherein said final shape of said air bag forms an outline including:

a proximal end adjacent the inflator and having a first width,

a medial portion having a second width that is greater than the first width, and

a distal end opposite the proximal end and having a third width which is less than the second width.